PATENT SPECIFICATION

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292,542

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Complete not Accepted.

COMPLETE SPECIFICATION.

Apparatus for Drying Potatoes or the like.

We, HANS VON FEHRENTHEIL UND GRUPPENBERG, of German Nationality, of 6, Kirchstrasse, Berlin, N.W. 40, Germany, and the firm "ORANIENBURGER EISWERKE" JOHANN SCHMIDT", of Lueneburgerstrasse (Stadtbahnbogen 368), Berlin, N.W. 40, Germany, a German Corporation, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

Object of the invention is an apparatus, by means of which one can dry potatoes, rapes, rape-heads, silo-food, debittered lupines, wet corn or the like at a proportional low expense of fuel. The farmer can produce by this drying also a real incontestable molasses food, when he admixes still in the drying apparatus to the dryed goods the molasses. Hereby any fuel can be used, for instance coals, coke, peat wood, lignite coke, gas or oil and so on, as the fire gases do not come directly in touch with the goods to be dryed.

For this purpose worms or the like are arranged in a drying trough heatable from outside, which move the goods to be dryed and conditionally break apart during the motion. In order that the duration of drying can be timed longer or shorter according to the species of the goods to be dryed, several drying troughs are arranged one next to the other and the worms rotating parallely to each other are so driven, that the running through goods to be dryed are advanced to and fro from the first to the next trough and so on. One can therefore pass the goods to be dryed over any number of troughs and prolongate or shorten the drying ad libitum. The breaking apart of the goods to be dryed serves therefor, to make possible a quicker outlet for the dampness still present below the dryed crust. For the breaking apart one uses for instance pins, teeth or the like arranged in the screw thread of the worm shafts, which at parts replace the wrings of the worm. Or one can insert into the worm threads cutting gates, sieve discs or the like and cover the worm wings in front of the cutting gate with caps, drums or the like. Then the worm drives the goods to be dryed by force into the cap, so that it is forced to pass from there through the openings of the cutting gate and is thereby reduced to small pieces. The escaping damp air is moved by wind blowers, ventilators or the like located above the troughs and guided away respectively sucked off. A still stronger air effect one can attain, if the worm shaft is constructed hollow and provided with holes, through which air guided into the hollow shaft can be blown against the goods to be dryed.

In the drawing a few sample constructions of the object of the invention are illustrated, and it shows Fig. 1 a plane view of a drying apparatus consisting of four drying troughs one located next to the other, Fig. 2 a front view of the drying apparatus, Fig. 3 a cross-section of a drying apparatus with heating channels placed between the troughs. Fig. 4 a part of a worm shaft on which instead of wings pins are fixed in the worm thread with a cape providing a sieve end arranged in front thereof covering the wings, Fig. 5 a wind blower placed above the troughs and of the same length as these and Fig. 6 in cross section a hollow worm shaft constructed as an air conduct.

The drying troughs 1 are mounted in the chamotte bedding 2 which rests directly upon the masonery of the firing. The kind of the heating channels 4 depends of course on the fuel. Shafts 6 on which are mounted the wings 7 run in the bearings 5. The driving of the shafts 6 is for instance effected by a belt wheel 8. The spur gears 9 are so arranged, that the goods to be dryed pass from the feeding funnel 10 along the first trough and from there along all the other

troughs one after the other. To transfer the goods to be dryed from the one to the next trough there serve throwing out wings 11 in front of which the trough provides a passage opening 12, so that the thrown out goods are placed through said opening 12 directly upon the next trough.

At the use of coal- or wood-firing it is preferable to arrange heating channels 4 as they are shown in figs. 1 and 2. In limited spaces one can use return channels 13 (Fig. 3) which conditionally can heat above the lower troughs upper troughs mounted in stories. According to fig. 3 the return channels heat but only the same lower troughs from the side.

To break apart the goods to be dryed, for instance potatoes one can use pins, spoons, teeth or the like 14 (fig. 4), which are mounted in the worm thread on the worm shafts instead of worm wings. Or one inserts in the worm wing threads cutting to pieces gates, sieve discs or the like 16 in front of which above the worm wing a cap 15 is located. Then the wings 7 transport the goods to be dryed below the cape under pressure, so that it has to pass the cutting to pieces gate 16 and must be thereby reduced to small pieces.

The sucking off of the damp air is for instance effected by means of an exhaustor. Above the troughs a wind blower 17 (fig. 5) can be arranged which consists of a long shaft with fan like wings fixed thereto. The wings blow the arising damp air away from the goods to be dryed and bring the same into the motion corresponding to the effect of the exhaustor. Also air spindles of the kind of ventilators can be used. A special strong air sucking-off effect is attained, if one constructs the shafts 18 (fig. 6) hollow and provides them with openings 19, through which out of the hollow shafts the air is blown directly against the goods to be dryed. The air escaping from the hollow shaft upwards is caught by the fan like wings and also driven against the goods to be dryed.

Having now particularly described the nature of my said invention and in what manner the same is to be performed, I declare that what I claim as new is:—

1). In an apparatus for drying potatoes or the like the combination of a drying trough (1) heated from the outside and of worms or the like arranged in said trough adapted to move the goods to be dryed and conditionally break the same apart the motion.

2). In an apparatus, as claimed in claim 1, the combination of several drying troughs (1) one placed next to the other, worms (7) rotating parallely to each other arranged in said troughs and means to drive the same in such a manner that the goods to be dryed pass along to and fro from the worm of the first trough to the next trough and so on.

3). In an apparatus, as claimed in claims 1 and 2, the combination of pins, teeth or the like arranged in the screw thread of the worm shafts adapted to partially replace the worm wings for the purpose to break apart and work through the goods to be dryed.

4). In an apparatus, as claimed in claims 1 to 3, the combination of cutting-gates, sieve discs or the like inserted in the screw threads of the worms and caps, drums or the like covering the worm wings and located in front of said cutting gates.

5). In an apparatus, as claimed in claims 1 to 4, the combination of wind blowers, ventilators or the like located above the worms adapted to quicken the drying of the damp air escaping from the goods to be dryed by the moving, guiding away resp. sucking off of such damp air.

6). In an apparatus, as claimed in claims 1 to 5, the combination of hollow worm shafts and holes in said worm shafts adapted to blow the air guided into the hollow shaft against the goods to be dryed.

Dated this 21st day of June, 1928.

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Fig.1.

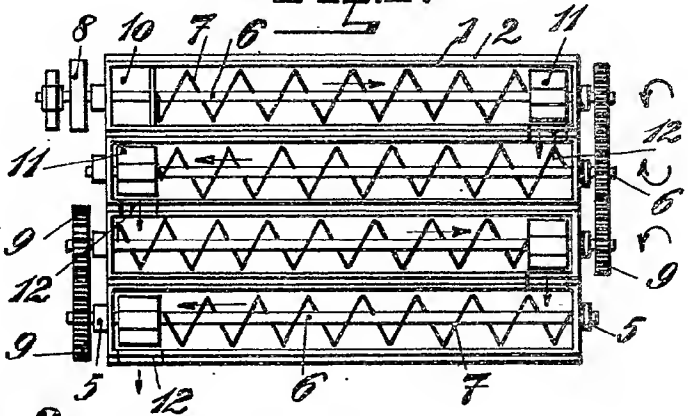


Fig.2.

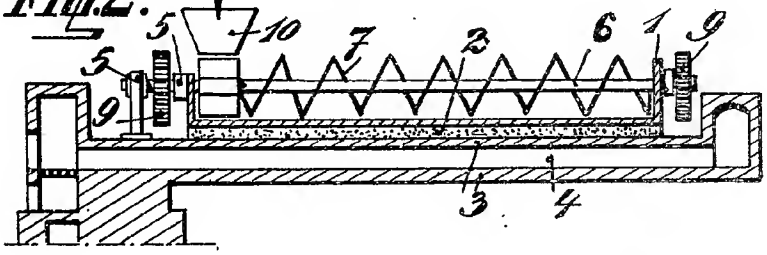


Fig.3.

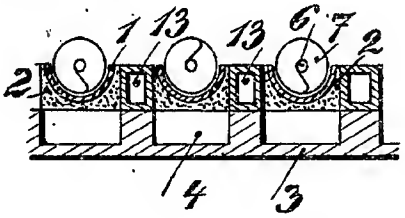


Fig.4.

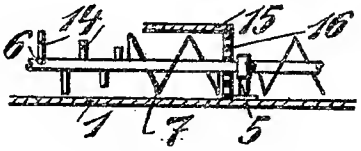


Fig.5

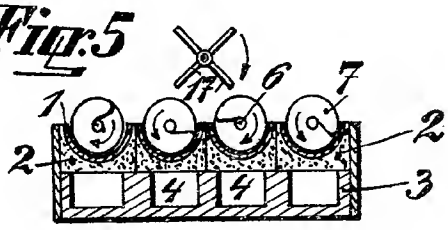
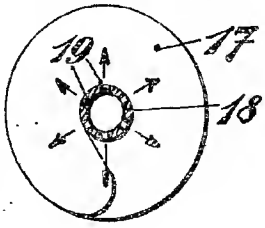


Fig.6.



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